

18/7/24

CS19541 - Computer Networks - Lab manual Practical 1

Aim: Study of various network commands used in Linux and Windows

Basic Networking Commands

1) C:\Users\REC>arp-a

Interface: 192.168.56.1 --- 0x7

Internet Address	physical address	Type
192.168.56.255	ff-ff-ff-ff-ff-ff	Static
224.0.0.2	01-00-5e-00-00-02	Static
224.0.0.22	01-00-5e-00-00-1b	Static
224.0.0.251	01-00-5e-00-00-fb	Static
224.0.0.252	01-00-5e-00-00-fc	Static
239.255.255.250	01-00-5e-7f-ff-fa	Static

Interface: 192.168.155.1 --- 0x13

Internet Address	physical address	Type
192.168.155.255	ff-ff-ff-ff-ff-ff	Static
224.0.0.2	01-00-5e-00-00-02	Static
224.0.0.22	01-00-5e-00-00-1b	Static
224.0.0.251	01-00-5e-00-00-fb	Static
224.0.0.252	01-00-5e-00-00-fc	Static
239.255.255.250	01-00-5e-7f-ff-fa	Static
255.255.255.255	ff-ff-ff-ff-ff-ff	Static

2) C:\Users\REC>hostname

DESKTOP-ATEX DUG

3) C:\Users\REC>ipconfig

Windows IP configuration.

Ethernet adapter Ethernet

connection-specific DNS suffix:

Link-local IPv6 address : fe80::54c0:052b:d98c:d687

IPv4 Address : 172.16.8.102

Subnet Mask : 255.255.252.0

Default Gateway : 172.16.8.1

Wireless LAN adapter Wi-Fi:

Media State : Media disconnected

Ethernet adapter VMware Network Adapter VMnet8:

connection-specific DNS suffix:

Link-local IPv6 Address : fe80::7713:1ca4:1852:b2b9

IPv4 address : 192.168.155.1

Subnet Mask : 255.255.255.0

4) > nbtstat -n

Ethernet-2:

Node IP Address: [192.168.56.1] Scope Id: []

NetBIOS Local name table

Name	Type	Status
Desktop-ALEXDVR400	unique	Registered
Workgroup\00	Group	Registered
Desktop-ATEX DVR 400	unique	Registered

5) C:\users\REL > netstat

Active Connections.

Proto	Local address	foreign address	state
TCP	127.0.0.1:49133	Desktop-ATEX DVR:49134	established
TCP	172.16.8.102:49943	a-0003:https	close-wait
TCP	172.16.8.102:49944	a-0003:https	close-wait

6) c:\users\AFC>nslookup

Default server: unknown

Address: 172.16.8.1

7) pathping - g google.com

Tracing route to google.com [216.58.200.142]
over a maximum of 30 hops:

0 DESKTOP-ATEK DUA [172.16.8.102]

Computing statistics for 0 seconds...
source to here this node/link

HOP	RTT	Lost/Sent = Pct	Lost/Sent = Pct
0			

Address

DESKTOP-ATEK DUA [172.16.8.102]

Trace complete.

8) ping -t 172.16.8.102.

Pinging 172.16.8.102 with 32 bytes of data:

Reply from 172.16.8.102: bytes=32 time<1ms TTL=128

ping statistics for 172.16.8.102:

Packets: Sent=54, Received=54, Lost=0(0% loss),

Approximate round trip times in milli-seconds:

Minimum=0ms, Maximum=0ms, Average=0ms

9) route

route Delete 157.0.0.0

route Delete 3ffe::131

route add 3ffe::132 3ffe::1

Linux Networking commands:

1) #IP

usage: IP [options] object & command [help]

IP [-force] -batch filename

where object := & link / address / address label / route /
rule / neigh / table / tunnel / tuntap / maddress /
mroute / mrule / monitor / xfrm / netns / netpl
join / macsec / tcp-metrics / token / netconf / vrf }

IP route get 10.10.1.4
10.10.1.4 via 172.16.8.1 dev enp280 src 172.16.11.196 uid 1000 cache

2) #ifconfig

enp280: flags: 4163 < UP, BROADCAST,

Running, multicast > mtu 1500

inet 172.16.8.87 netmask 255.255.252.0

broadcast 172.16.11.255

inet6 fe80::b19b:779f:dae1:d018 prefix

len 64 scopeid 0x20 < link >

ether 50:9a:4c:34:db:b3 tx queue len 1000

(ethernet)

Rx packets 99897 bytes 107110398 (102.1 MiB)

Rx errors 0 dropped overrun 0 frames

Tx packets 22295 bytes 9334319 (8.9 MiB)

Tx errors 0 0 overruns 0 0

collisions 0

3) #ping

usage: ping [-a AbBdDthLn OqRUVbA] [-c count]

[-i interval] [-I interface] [-m mark] [-M pmtu disc

option] [-i preload] [-p pattern] [-a tos]

[-s packetsize] [-s sndbuf] [-t HI] [-T timestamp-

option] [-w deadline] [-W timeout] [hop1..] destination

4) #nmcli

enp280: connected to New 802-3-ethernet
connection.

"Realtek RTL8111/8168/8411 PCI Express Gigabit Ethernet controller"

ethernet (v8169), 50:9A:4C:34:D6:63 [hw]
mtu 1500

ip4 default

Pnet 4 172.16.8.87/22

Pnet 6 fe80::b79b:7794:dae1::F0181b4

Wlp350: unavailable

"Qualcomm Atheros QCA9565/AR9565 wire network adapter"

with (ath 9K), AB:DC:38:7E:65:B7, hw, mtu 1500

5) mtr

My traceroute [v0.91]

Sat Jul 20 14:01:53 2020

local host local domain (1:1)

Keys: Help Display mode Restart Statistics order of field quit

Host

1:1:1

Packets

Loss/Snt Last

0.0/1 200 0.1

Pings

Avg

Best Wst StDev

0.1 0.2 0.0

Result:-

various network commands used in linux and windows is studied.

25/8/19